

## Washington Public Power Supply System

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Docket No. 50-508

June 2, 1983  
G03-83-443

Director of Nuclear Reactor Regulation  
Attention: George W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

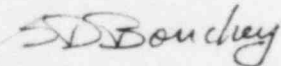
Subject: SUPPLY SYSTEM NUCLEAR PROJECT NO. 3  
ENVIRONMENTAL REPORT - OPERATING LICENSE STAGE  
RESPONSE TO NRC REQUEST FOR INFORMATION

Reference: Letter, GW Knighton (NRC), to RL Ferguson  
(Supply System), dated April 6, 1983

A request for information resulting from the staff's environmental site visit of March 15-16 was transmitted under the referenced letter. Please find the Supply System's response attached.

If you require additional information or clarification, please contact KW Cook, Licensing Project Manager at WNP-3 (206/482-4428, EXT: 5436).

Very truly yours,



G. D. Bouchey, Manager  
Nuclear Safety & Regulatory Programs

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Attachment

cc: WG Albert	NRC
D Smithpeter	BPA 762
A Vietti	NRC

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ATTACHMENT

RESPONSES TO NRC QUESTIONS OF APRIL 6, 1983 (Re: WNP-3 ER-OL)

290.08 Q. Provide a copy of the wildlife management plan for the equalization and flocculation ponds. Also identify other onsite areas to be developed as fish and wildlife habitat after construction is completed.

- A. The WNP-3 Site Certification Agreement with the Energy Facility Site Evaluation Council (EFSEC) requires replacement and/or compensation for wildlife losses.

The Supply System is presently finalizing plans for timber management and wildlife habitat enhancement for portions of the land it owns. In addition to the equalization and sedimentation ponds, areas under consideration include the Ranney well intake area, the Hyatt Creek sedimentation pond, and the Fuller Creek drainage. Upon approval of the plan by EFSEC, a copy will be forwarded to the NRC. We expect it to be available early this summer.

290.09 Q. Identify areas in site vicinity (response to question 290.03) where bald eagles were sighted between February and September 1981 and in April 1981 by the Washington Department of Game.

- A. Bald eagle sightings were noted during the aquatic bird survey portion of the Supply System's environmental monitoring program. These surveys were conducted weekly between Smith Canal (~RM 15) and the South Elma Bridge (~RM 24). During 1981, eagles were sighted in February, April, May, June, July and September (see Table 3-5 of the report on 1981 monitoring which was provided in response to Q291.03). The majority of the sightings were in the lower two miles of the study reach while two sightings were made between approximately RM 20 and RM 23. The four bald eagles observed by the Washington Department of Game (WDG) in April 1981 were sighted about two miles southwest of Elma (or about 2 1/2 miles northeast of WNP-3).

Our response to Q290.03 noted that neither the Supply System (and its consultant) nor the WDG had sighted bald eagle nests in the site vicinity. We have since learned (via telephone communication March 10, 1983) that WDG has identified two active nests in the area. One, known as the "South Elma nest," was established in 1982 and is located on the north bank of the Chehalis near RM 27 about 4 1/2 miles ENE of WNP-3. The other, the "Brady Loop nest," has been active since 1979 and is located near the WNP-3 Ranney wells in the Greenbanks Slough area about 3 1/2 miles WNW of the plant. The precise locations of these nests are not disclosed by WDG.

WNP-3  
ER-OL

290.10 Q. Provide a list of plant species that comprise beef and dairy pastures within a three-mile radius of WNP-3.

A. The Grays Harbor County Extension Agent's Office in Montesano informs us that the grasses listed below are used in pasture grass mixtures in the area.

Able orchard grass  
Hallmark orchard grass  
Alsike clover  
New Zealand white clover  
Forager tall fescue  
Redman red clover  
Climax timothy  
Reveille tetraploid perennial ryegrass  
Tetraploid annual ryegrass  
Hinak tetraploid annual ryegrass

290.11 Q. Provide a list of row crops or garden crops grown within a three-mile radius of WNP-3.

A. There is little variety to the row and garden crops (commercial) grown within three miles of WNP-3. Corn (field and silage) is grown almost exclusively. Potatoes (Yellow Finnish) are grown in the northwest sector at about three miles distance. Peas (for processing and silage) are produced throughout the Chehalis River valley and may be grown in limited quantity within three miles of the plant.

290.12 Q. Identify the final routing alignment between WNP-3 and the BPA's Satsop Substation for the 500-kV line. Show locations of towers and vegetative cover types along the proposed routes.

A. The routing of the WNP-3 to Satsop Substation 500-kV line (including tower locations) is shown in the attached figure. The route is also indicated on the attached copy of an aerial photograph. The entire route is over areas previously cleared for plant construction. The reestablished vegetative cover includes red alder, Douglas fir seedlings, and grasses. The figure will be incorporated into Section 3.9 of the ER-OL by amendment.



BPA SATSOP SUBSTATION  
(APPROX. ELEV. 310 FT. MSL)

LEGEND

X TRANSMISSION TOWER W/APPROX. BASE ELEV.

--- 500-KV LINE W/APPROX. SPAN BETWEEN TOWERS

WAREHOUSE

OFFICE BLDG.

COOLING  
TOWER

WNP-3

390' MSL

237'

552'

390' MSL

698'

456' MSL

435' MSL

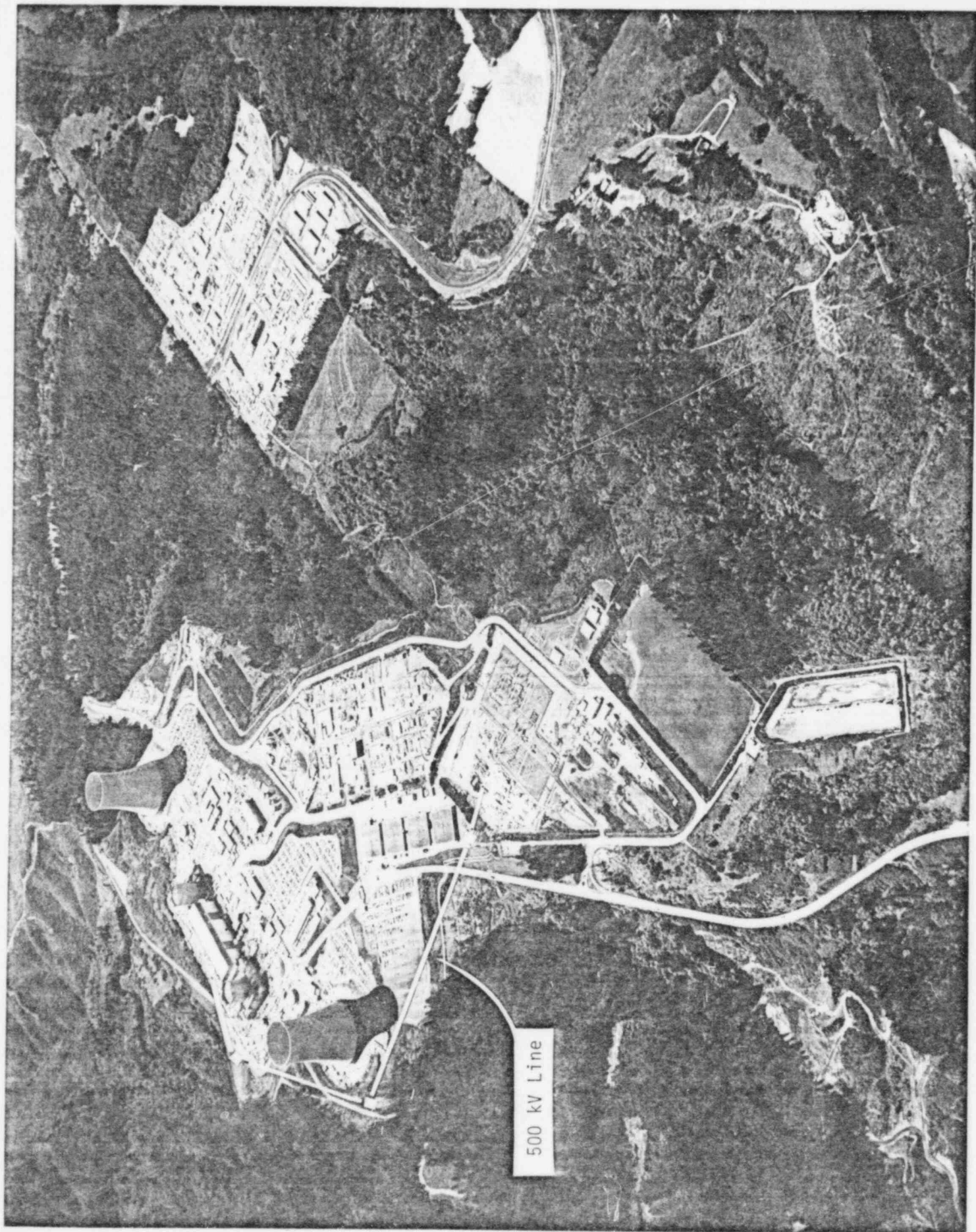
1068'

1018'

476'

335' MSL





291.22 Q. Table 3.4-1 of the ER-OL shows mean intake and discharge temperature operating parameters. From this, monthly mean  $\Delta T$ 's ( $^{\circ}\text{C}$ ) can be calculated that are between 1.6-1.7 $^{\circ}\text{C}$ . The NPDES permit allows up to 15 $^{\circ}\text{C}$   $\Delta T$  if the ambient river temperature is  $\leq 20^{\circ}\text{C}$ . Provide a modified Table 3.4-1 to show more realistic operational discharge  $\Delta T$  figures in terms of: (1) expected values for one-unit operation by month; (2) ranges of  $\Delta T$  by month.

- A. Normally the blowdown temperatures from an evaporative cooling system of given design may be predicted from the wet bulb temperature and relative humidity. For WNP-3, the prediction is more difficult and less certain because of two factors: (1) a supplemental heat exchanger can be used to transfer heat from the blowdown to makeup stream; and (2) the makeup water temperature is not the same as the river water temperature (see Figure 2.4-12). The question indicates some confusion on the second point.

The discharge temperatures in Table 3.4-1 are not necessarily unrealistic. They are derived from predicted mean intake water temperatures (shown in Table 3.4-1) and assume year-round operation to the design 30 $^{\circ}\text{F}$  (1.7 $^{\circ}\text{C}$ ) approach (without use of the system flexibility described in Subsection 3.4.3). In fact, for ease of operation, the blowdown heat exchanger system may be operated in that mode. Review of the average wet bulb temperatures (Table 3.4-1) with the tower performance characteristics (Figure 3.4-3) suggests that, on the average, supplemental cooling may not be required in January, February, March, November, and December. A new column of discharge temperatures has been added to Table 3.4-1. Here it is assumed that the heat exchanger is only used as necessary to comply with the NPDES permit limits. The actual mode of operation will be derived from experience. (e.g., It may prove more practicable to operate with full heat exchanger flow during the summer months than to vary the bypass to just attain the permit limits.)

Table 3.4-1 was intended to display cooling system operating parameters independent of river temperatures. The relationship between discharge and receiving water temperatures, using conservative assumptions, is considered in Subsection 5.1.2. Alternatively, the two columns of discharge temperature in Table 3.4-1, as revised, may be compared with the mean river temperatures in Table 2.4-5 to gain an appreciation of average  $\Delta T$ s. In response to the question, a new column indicating the range of  $\Delta T$  (discharge minus river) has been added to Table 3.4-1. The determining parameters are the minimum and maximum river temperatures and the permit limits.

In summary, WNP-3 is designed with a blowdown-to-makeup water heat exchanger to comply with restrictive NPDES permit conditions. Prediction of discharge temperatures is uncertain because of the number of variables involved and because the mode of operation of the heat exchanger is not fixed. The range of expected discharge temperatures under average monthly conditions is indicated by the two columns in Table 3.4-1, as revised.

- 291.23 Q. Provide the following: (1) the plan of study for operational monitoring that will be submitted to the state during the summer of 1983 (30 months prior to FLD); (2) the report on fish bioassays that is required by special condition G-29 of the NPDES permit (scheduled to be completed July 1, 1983).
- A. The preoperational/operational ecological monitoring program plan will be provided when it is prepared for submittal to EFSEC. We anticipate that will be July 1983. The summary report on the bioassays conducted under Condition G29 of the NPDES permit is now scheduled for completion in early August. It too will be provided when completed.



TABLE 3.4-1  
COOLING SYSTEM OPERATING PARAMETERS

Month	Intake Water Temperature	Discharge(a) Temperature w/ Heat Exchanger Full Time	Discharge(b) Temperature w/ Heat Exchanger As Needed	Average(c) Wet Bulb Temperature	Critical(d) Wet Bulb Temperature	Range in $\Delta T$ (e) Discharge-River	Maximum(f) Blowdown	Maximum(f) Evaporation	Maximum(f) Makeup
	(°F/°C)	(°F/°C)	(°F/°C)	(°F/°C)	(°C)	(°C)	(cfs)	(cfs)	(cfs)
January	47.5/ 8.6	50.5/10.3	65.0/18.3	36.1/ 2.3	49.4/ 9.7	1.7-15	5.9	29.2	35.1
February	46.5/ 8.1	49.5/ 9.7	66.5/19.2	38.4/ 3.6	51.1/10.6	1.7-15	5.9	29.5	35.4
March	44.5/ 6.9	47.5/ 8.6	67.0/19.4	39.2/ 4.0	54.0/12.2	1.7-15	6.0	30.3	36.3
April	45.0/ 7.2	48.0/ 8.9	68.0/20.0	43.4/ 6.3	56.0/13.3	1.7-15	6.1	30.5	36.6
May	48.5/ 9.2	51.5/10.8	68.0/20.0	48.1/ 8.9	61.0/16.1	0-10	6.3	31.5	37.8
June	52.5/11.4	55.5/13.1	68.0/20.0	53.1/11.7	66.0/18.9	0- 8.9	6.3	32.3	38.7
July	58.0/14.4	61.0/16.1	68.0/20.0	56.1/13.4	65.4/18.6	0- 5.6	6.4	32.3	38.7
August	60.5/15.8	63.5/17.5	68.0/20.0	55.8/13.2	60.9/16.1	0- 4.4	6.3	31.5	37.8
September	62.0/16.7	65.0/18.3	68.0/20.0	52.4/11.3	62.8/17.1	0- 8.3	6.3	31.8	38.1
October	60.5/15.8	63.5/17.5	68.0/20.0	47.3/ 8.5	56.0/13.3	1.7-15	6.1	30.5	36.6
November	56.5/13.6	59.5/15.3	67.5/19.7	40.5/ 4.7	52.9/11.6	1.7-15	6.0	30.0	30.0
December	52.0/11.1	55.0/12.8	66.5/19.2	38.3/ 3.5	52.1/11.2	1.7-15	5.9	29.8	35.7

(a) Heat exchanger operated to 3°F approach to makeup temperature.

(b) Heat exchanger used only as necessary to comply with NPDES permit.

(c) Average wet-bulb temperatures at Olympia for 1948-1968.

(d) Daily critical wet-bulb temperatures at Olympia 1952-1977.

(e) Based on minimum and maximum river temperatures (Table 2.4-5) and assuming possible operation of the supplemental heat exchanger.

(f) Based on 40 percent relative humidity, critical wet-bulb temperatures, and operation at 6 cycles of concentration.

311.04 Q. Please update your documentation with respect to:

- a. The 230 acres of Skarperud Timber Company land in the exclusion area for which appropriate easements have not been obtained. This update should reflect the outcome of the eminent domain proceedings initiated by WPPSS.
- b. The WPPSS negotiations to obtain easements from:
  1. Bonneville Power Administration, regarding the transmission corridor,
  2. Grays Harbor County, regarding Keyes Road.

A. This question appears to address information presented in Sub-section 2.1.2 of the FSAR.

- a. Eminent domain proceedings on the Skarperud property were concluded in March 1983. The Supply System now owns the land in fee and will not require an exclusionary easement.
- b. Negotiations with BPA and the County have not been completed, but the Supply System does not anticipate problems in granting or obtaining the necessary easements.

311.05 Q. Please rectify the discrepancy (i.e., number of residents) between Table 2.1-8 (distance from closest resident to the site) and Table 2.1.-3 (population within 50 mile radius of the site).

- A. We believe the discrepancy is the result of a slight error in the placement of the sector-distance grid on the working base map used to compile Table 2.1-2 (FSAR Table 2.1-3). The grid appears to have been centered approximately one-quarter mile west and slightly north of WNP-3. Table 2.1-2 will be amended to correct errors in the distribution of residents within two or three miles of the plant. Changes beyond this near-plant populace would be insignificant.